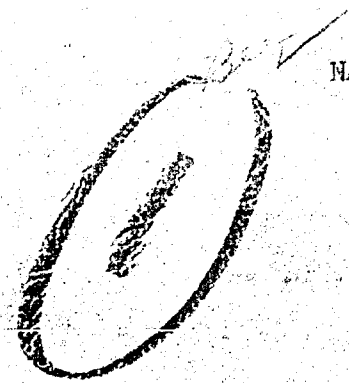


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NORTH AMERICAN AVIATION INC

APPENDIX A

REPORT ON
INVESTIGATION OF A-4 SIGHT
IN F-86E AIRPLANE

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Report No. 114 NA-52-265-App-A

NORTH AMERICAN AVIATION, INC.

INTERNATIONAL AIRPORT LOS ANGELES 45, CALIFORNIA

ENGINEERING DEPARTMENT

REFERENCE

6 INVESTIGATION OF A-4 SIGHT
IN F-86E AIRPLANE

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Date 4-25-52

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APPENDIX A

REPORT ON
INVESTIGATION OF A-4 SIGHT
IN F-86E AIRPLANE

NORTH AMERICAN AVIATION, INC

1000 AVIATION BLVD.
LOS ANGELES 1, CALIFORNIA

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4. 172-95-30A	10. 172-95-29C
5. 172-95-30B	11. 172-95-31B
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I. SUMMARY:

- A. In the original report, NA-52-265 of which this report is Appendix A, it was concluded that the major cause of reticle vibration was excessive free play, mirror unbalance and lack of inherent system stiffness. Based upon the findings, Sperry Gyroscope Company and A. C. Spark Plug Company, respectively, submitted one reworked A-4 sight each for test at North American Aviation, Inc. The two A-4 sights were installed in ship AF51-2753. Gun firing tests were conducted and recorded.
- B. The rework accomplished by the sight manufacturers was effective in reducing high frequency reticle vibration. The predominant range of vibration was 3 - 5 mils in azimuth and in elevation, with a peak of approximately 6 - 8 mils in both azimuth and elevation. Specific figures for each condition are tabulated in Section VI.
- C. Low frequency reticle oscillation occurred during air and ground firing tests conducted at North American. Further investigation is considered necessary to determine the cause of this condition.
- D. An A-4 adapter assembly, incorporating a removable combining glass, was devised to eliminate removal of the sight head for the purpose of cleaning the aft face of the windshield and the forward face of the combining glass. This configuration was mounted in the F-86E airplane, in conjunction with an N-9 sight, and subjected to gun fire vibrations. In azimuth, the predominant range of reticle vibration was 1 - 2 mils with a peak of 2 - 3 mils. In elevation, the predominant range was 1 - 2 mils with a peak of 3 - 4 mils.
- E. The removable combining glass was also checked for retention of bore-sight position. The thumb screws which retain the combining glass in the adapter were tightened in various sequences to determine the best procedure to follow. It has been found that if the thumb screws are tightened simultaneously, or reasonably so, the maximum variation from the original bresighted position is approximately 1/2 mil.

II. REASONS FOR INVESTIGATION:

- A. To determine the effect of the rework upon reticle vibration.
- B. To determine the reaction of a removable combining glass when subjected to gun fire vibration.

III. PHOTOGRAPHIC DATA:

The Contractor has edited a 16 mm motion picture record of the reticle vibration. This film record will be submitted as part of this report. The film title is "A-4 Gunsight Reticle Vibration Test - Series #2."

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IV. A-4 SIGHT HEAD NO. 199 (Sperry):

A-4 sight head number 199 was delivered to North American by a representative of the Sperry Gyroscope Company. This sight head was modified by the Sperry Gyroscope Company at their plant as follows:

1. Mechanical caging ball replaced by a cylinder to obtain line contact instead of point contact.
2. Added jumper leads to contact assemblies of deflection motor and mirror assembly.
3. Azimuth drive ball, approximately 1/8 inch diameter, replaced by a 1/4 inch diameter split ball.
4. Added anti-vibration brace between reticle assembly and mirror drive assembly.
5. Installed new mirror assembly, approximately 50% lighter.
6. Installed new type of mirror balance system.
7. Mechanical tolerances reduced approximately 50%.

V. A.C. SPARK PLUG COMPANY A-4 SIGHT JOB NO. 19:

A-4 sight job number 19 was delivered to North American by a representative of the A.C. Spark Plug Company. This sight head was modified by the A.C. Spark Plug Company at their plant as follows:

1. Added anti-vibration brace between reticle assembly and mirror drive assembly.
2. Mechanical tolerances were reduced approximately 50%.

VI. TEST:

A. General:

A-4 sight head number 199, a Sperry Gyroscope Company product, was installed in ship AF51-2753 in conjunction with sight system number 16 (see photographs 172-95-27B and 172-95-27C). An aerial gunnery flight test was conducted and recorded with a G.S.A.P. camera. Upon completion of the aerial gunnery test, the airplane was tied down on the North American Gun Firing Range (see photograph 172-95-31A). Ground firing tests were conducted and recorded with a 16 mm Cine Kodak camera. The recording camera was mounted on a metal scaffold which was completely detached from the airplane (see photograph 172-95-29B). A ground firing test was also conducted with A-4 sight job number 19, an A.C. Spark Plug Company product (see photographs 172-95-30A and 172-95-30B).

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B. Compilation of Data:

Data was compiled by conducting a frame by frame analysis of the film record. Tables I, III, V, VII, IX, and X are a record of relatively high frequency vibration, such as a distinct blur or an appearance of more than one reticle center dot on a single film frame. Measurements were taken from center to center of the reticle dot in a vertical and horizontal direction. Reticle vibration was divided into two groups; a predominant range, which is defined as the range of the reticle excursion which occurred during 50 per cent or more of the film frames analyzed, and a peak range, which varied from approximately 6 per cent to 25 per cent of the number of film frames analyzed. Tables II, IV, VI, and VIII are a record of relatively low frequency reticle oscillation. The location of the reticle center dot prior to firing the six M-3 guns was chosen as the center of a co-ordinate system. Wherever a blur existed on the film frame, the center of the blur was plotted as the center of the reticle. Figures 1, 2, 3 and 4 are a graphic presentation of reticle oscillation in azimuth. Figures 1a, 2a, 3a and 4a represent reticle oscillation in elevation. These graphs were constructed from data of Tables II, IV, VI, and VIII.

C. Aerial Gunnery Flight - Ship AF51-2750 - Sight Head No. 199 at Edwards AFB:

Prior to delivery to North American, sight head number 199 was installed in ship AF51-2750 at Edwards AFB. Aerial gunnery flights were conducted by Air Force personnel. A film record of these flights was forwarded to North American and is submitted with this report as part of the North American permanent film record entitled "A-4 Gunsight Reticle Vibration Test - Series #2." The following data are based on a frame by frame analysis of the permanent film record:

TABLE I
AIRFIRE - SHIP AF51-2750 SIGHT HEAD NO. 199
HIGH FREQUENCY VIBRATION

Condition	Reticle Excursion in Azimuth (Mils)		Reticle Excursion in Elevation (Mils)	
	Predominant Range	Peak	Predominant Range	Peak
1. Mech. Caged	4-6	8-10	1-2	4-5
2. Uncaged Range - 1500	3-5	6-8	2-3	4-5

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In analyzing Edwards AFB film, it was necessary to select an arbitrary reference point in order to plot low frequency oscillation, since no film frames exist on this portion of the film record showing the position of the reticle before and after the gun fire burst. Since this information is lacking, it is impossible to determine whether or not the reticle center dot returned to its original position upon completion of the burst.

TABLE II
RETICLE OSCILLATION (MILS) (LOW FREQUENCY)
AIR FIRE - SIGHT HEAD NO. 199 - UNCAGE RANGE 1500
SHIP AF51-2750

X	Z	X	Z	X	Z	X	Z
+2	3	-10	+4	-8	+5	+4	+10
+5	-1	-9	0	-8 1/2	+3	0	+5
+3	+1	-7	+2	-3	+5	+6	+9
+1	-3	-7	-1 1/2	-10	+3	+5	+10
+1 1/2	+3	-2 1/2	-2 1/2	-6 1/2	+5 1/2	+5	+10
0	0	-5	+1	-6	+6 1/2	+3	+7
-3	+1	-5	-1 1/2	-7 1/2	+5	+4	+7
+1/2	+2 1/2	-5	+1/2	-8	+7	+5	+6
-2 1/2	+5	+2	+1/2	-6 1/2	+5 1/2	+6 1/2	+7
0	+5	-6	0	-9	+5	+3 1/2	+5
-5	+5	-6	-3	-5	+4	+5	+10
-2 1/2	+5	0	0	-9	+5 1/2	+9	+9
0	+4 1/2	0	0	-10	+3	+6	+13
-5 1/2	+5 1/2	-1/2	0	-6	+8	+3	+5 1/2
-6	+4	-2	+1	-6	+5	+8	+10 1/2
-7 1/2	+2	0	0	-10	+5	0	+10
-10	+1 1/2	+1	0	-6	+5	+5	+10
-6	+6	+2	0	-5	+5	0	+8
-7 1/2	+1 1/2	-1	+1	-9	+5	0	+9 1/2
-10	+5	+2 1/2	+2 1/2	-7	+6 1/2	0	+9
-9	+6	-1/2	+1/2	-1	+5	+6	+9 1/2
-10	+6	+1 1/2	+5	-5	-5	-4	+11
-10	+6 1/2	0	+5	-5	+5	+3 1/2	+8
-10	+5	+2	+1	-6 1/2	+5 1/2	-3	+13
-10	+4	-2	+6	+1	+7	0	+10
-10	+4	-3 1/2	+4	0	+5	-2	+10
-13	+6	-4	+4	0	+6 1/2	-2	+10
-10	+5	-5	+2 1/2	-4	+7	-2	+9
-11	+3 1/2	-3 1/2	0	+5	+10	-2	+10
-9	+5	-4 1/2	-4 1/2	0	+7	-3	+8
-8	+5	-5	+5	+2 1/2	+5		
-10	+5	-3	+6 1/2	+2	+8		
-7	+4	-5	+5	0	+7		
-9	+3	-5	+7	+4	+8		

NOTE: X - Lateral Axis
Z - Vertical Axis
Y - Longitudinal Axis

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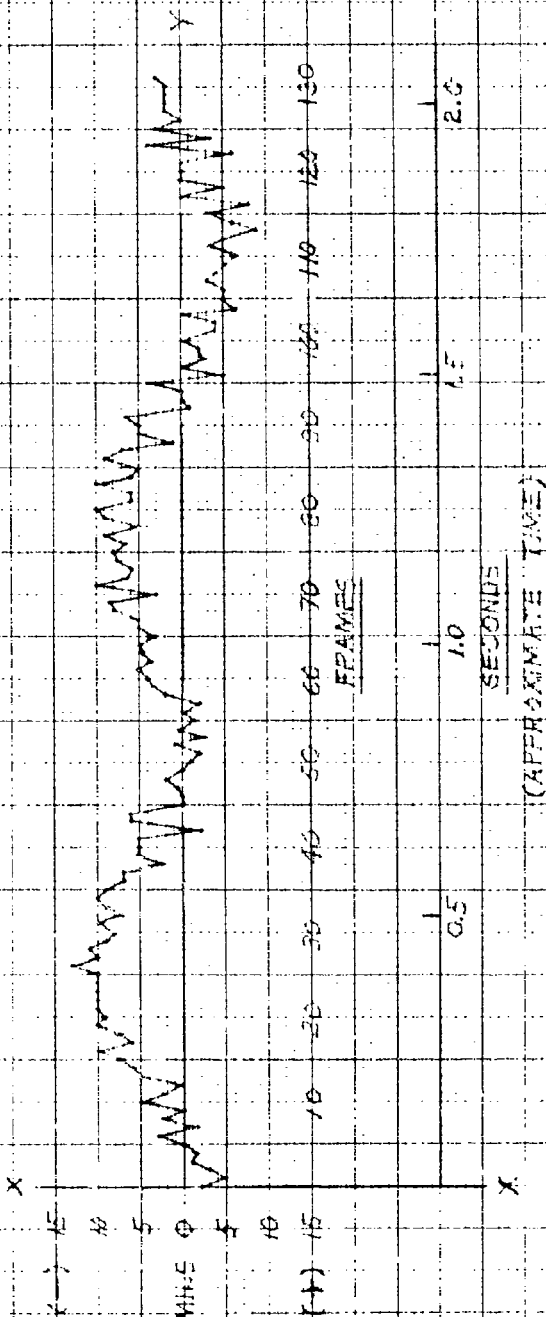
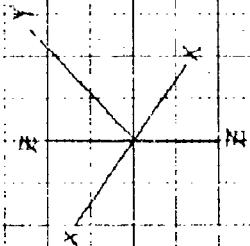
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MODEL NO

AIRPLANE COORDINATE SYSTEM



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ELEVATION

RETICLE OSCILLATION

AIR FIRE - 455-2750

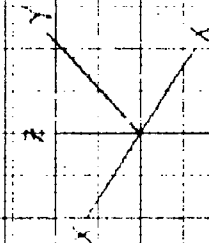
A-4 SIGHT #199 - UNLASED

RAYSE 1500

AN-N-6 - 64 FRAMES/SEC

DATA! TABLE II

AIRPLANE COORDINATE SYSTEM:



Z

(+) 15
10
5

(-) 10
5

0

10 20 30 40 50 60 70 80 90 100 110 120 130

FRAMES

SECONDS

(APPROXIMATE TIME)

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

0.5 1.0 1.5 2.0

Fig. 102

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D. Aerial Gunnery Flight - Ship AF51-2753 - Sight Head No. 199:

Sight head number 199 was installed in ship AF51-2753. An aerial gunnery flight test was conducted and recorded with a G.S.A.P. camera. The six M-3 guns were fired with the sight mechanically caged, electrically caged and uncaged. The following data are a record of vibration as defined in Section VI, paragraph B.

TABLE III
AIR FIRE - SHIP AF51-2753 - SIGHT HEAD NO. 199
HIGH FREQUENCY VIBRATION

<u>Condition</u>	<u>Reticule Excursion in Azimuth (Mils)</u>		<u>Reticule Excursion in Elevation (Mils)</u>	
	<u>Predominant Range</u>	<u>Peak</u>	<u>Predominant Range</u>	<u>Peak</u>
1. Mech. Caged Straight and Level Flight	3-5	6-8	3-5	6-8
2. Uncaged - Range 2400 Straight and Level Flight	3-5	6-7	3-5	6-9
3. Electrically Caged Straight and Level Flight	3-4	7-9	4-6	7-8
4. Uncaged - Min. Range 5 "g" Pull-up	3-5	6-7	3-5	6-7
5. Uncaged - Min. Range 3 "g" Turn	2-4	5-6	3-5	6
6. Uncaged - Range 2700 3 "g" Turn	3-5	6	3-5	6-7

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TABLE IV
RETICLE OSCILLATION (MILS) (LOW FREQUENCY)
AIR FIRE - SIGHT HEAD NO. 199 - UNCAGED RANGE 2400
SHIP AF51-2753

X	Z	X	Z
0	0	0	-2
0	0	0	-3
0	0	+1	-5
-1	-1	0	-3
-1	-2	-1	-3
0	-1	+2	-3
-1	-1	+3	-4
+2	-2	+4	-2
+2	-2	+3	-2
-1	-4	+2 1/2	-2 1/2
-2	-1	0	-1
0	-2	+1 1/2	-2 1/2
0	-4	+1 1/2	-3
+2 1/2	-2 1/2	+1	-1
+1 1/2	-3	+1	-1
-1	-4	-1	-2 1/2
0	-4	-1	-1
0	-4	0	-1
+2	-2	0	-1
-2 1/2	-2 1/2	+1	0
0	-1	+1	-1
0	-2	+2	-1
-2 1/2	-2 1/2	+2	0
-3 1/2	+3	+2 1/2	+1/2
-2 1/2	-2 1/2	0	0
-2	-4	0	0
0	-2 1/2	0	0
0	-3	0	0
0	-1	0	0
0	-2 1/2	0	0

NOTE: X - Lateral Axis
Z - Vertical Axis
Y - Longitudinal Axis

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DATE				MODEL NO	Appendix A		

AIRPLANE COORDINATE SYSTEM

ELEVATION

RETICLE OSCILLATION

AIR FIRE ~ AF51-2753

A-4 SIGHT #193 ~ UNCHARGED

RANGE 2400

AN-N-6 ~ 16 FRAMES/SEC

DATA: TABLE IV

(+) E

MILS 0

(-) E

FRAMES

SECONDS
(APPROXIMATE TIME)

FIG 2a

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Page 11E. Ground Firing Test - Ship AF51-2753 - Sight Head No. 199:

Upon completion of the aerial gunnery flight test, the airplane was tied down on the Gun Firing Range. The six M-3 guns were fired with the sight in various conditions as stated in Table V.

TABLE VGROUND FIRE - SHIP AF51-2753SIGHT HEAD NO. 199

HIGH FREQUENCY VIBRATION

Condition	Reticle Excursion in Azimuth (Mils)		Reticle Excursion in Elevation (Mils)	
	Predominant Range	Peak	Predominant Range	Peak
1. Mech. Caged	6-8	10-11	3-4	5
2. Elect. Caged	3-5	7-8	3-5	6-7
3. Uncaged - Range 2400	3-5	8-10	3-5	7
4. Uncaged - Range 2400 Computer on Ground	2-3	7	3-5	6-7
5. Uncaged - Min. Range Computer on Ground	3-5	8-9	3-5	6

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LOS ANGELES 45, CALIFORNIA

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TABLE VI
RETICLE OSCILLATION (MILS) (LOW FREQUENCY)
GROUND FIRE - SIGHT HEAD NO. 199 - UNCAGED RANGED 2400
SHIP AF51-2753

X	Z	X	Z
0	0	+1 1/2	-2 1/2
-2	-1	-2	-2
0	0	+1	-3
-2	0	+2	-3
0	0	0	-2 1/2
0	-2 1/2	-1	-2 1/2
-2	-3	-1	-3
+1	-4	+1 1/2	-3
-2	-2 1/2	-2	-2 1/2
-3	-2 1/2	0	-2 1/2
-1	-2 1/2	-1 1/2	-3 1/2
+1 1/2	-3	-2 1/2	-2 1/2
0	-4	-2 1/2	-2
0	-2	0	-2
+1	-2 1/2	+1 1/2	-3
0	-2	+2	-1 1/2
0	-2 1/2	0	-3
-1 1/2	-3	-4	-2 1/2
+2	-2 1/2	+1	-2 1/2
+1	-2 1/2	-1 1/2	-2 1/2
-2 1/2	-3	-2	-1
-1	-1	-2	-1
+2	-2 1/2	-2	-1
0	-2 1/2	0	-1
0	-2 1/2	-1	-1
+2	-2 1/2	-1 1/2	-1
-1	-2 1/2	-2	-1
		-1	-1/2
		0	0
		0	0
		0	0
		0	0
		0	0

NOTE: X - Lateral Axis
Z - Vertical Axis
Y - Longitudinal Axis

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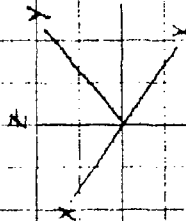
REPORT NO. Appendix A

DATE

MODEL NO.

AZIMUTH
RETICLE OSCILLATION
GROUND FIRE - AF54-2753
A-4 SIGHT #193 - UN-ASED
RANGE 2400
16 MM CINE KODAK - 16 FRAMES/SEC
DATA: TABLE III

AIRPLANE COORDINATE SYSTEM



X

(-) 5
 MILS 0
 (+) 5

10 15 20 25 30 35 40 45 50 55 60

FRAMES

1.0

2.0

3.0

4.0

SECONDS

(APPROXIMATE TIME)

FIG. 3

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ELEVATION

RETICLE OSCILLATION

GROUND FIRE ~ AF51-2753

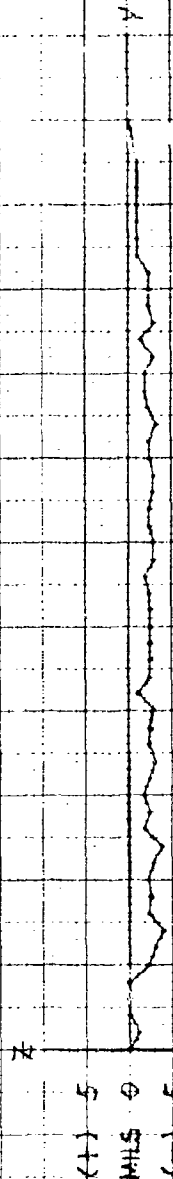
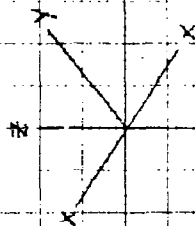
A-4 SIGHT # 193 ~ UNCLASSED

RANGE 2400

16 MM GUN KODAK ~ 1/4 FRAME/SEC

DATA: TABLE VI

AIRPLANE COORDINATE SYSTEM



FRAMES

2.0

SECONDS

(APPROXIMATE TIME)

FIG. 3a

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LOS ANGELES 45, CALIFORNIA

F. Ground Firing Test - Ship AFGL-2753 - Sight Head Job No. 19:

TABLE VII

GROUND FIRE - SHIP AF51-2753

SIGHT HEAD - ACSP JOB NO. 19

HIGH FREQUENCY VIBRATION

Condition	Reticle Excursion in Azimuth (Mils)		Reticle Excursion in Elevation (Mils)	
	Predominant Range	Peak	Predominant Range	Peak
1. Mech. Caged	2-4	7-9	2-3	4-5
2. Elect. Caged	3-5	7-8	3-5	6-7
3. Uncaged - Range 2400	3-5	6-7	3-5	6-7
4. Uncaged - Min. Range	4-7	7-9	4-6	7-8
5. Uncaged - Range 2400 Computer on Ground	4-5	7-8	3-5	6-7
6. Uncaged - Min. Range Computer on Ground	4-7	8-9	3-5	6-7

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TABLE VIII

RETICLE OSCILLATION (LOW FREQUENCY)

GROUND FIRE - ACSP JOB NO. 19 - UNCAOED RANGE 2400

X	Z	X	Z
0	0	+2 1/2	+2
0	0	+1 1/2	-1
+2	0	+2 1/2	+1
+2	0	+1 1/2	+1
+1 1/2	0	0	+2
0	+1 1/2	0	+2 1/2
+2	0	-2 1/2	+2
-1 1/2	+1	-1	0
0	0	-2 1/2	0
0	0	-1 1/2	+1 1/2
+2	-1 1/2	-1	+2
+2	0	0	0
+2 1/2	0	0	+1
+2	0	-2	0
+1	0	-1 1/2	0
-1	-1	-1 1/2	0
+1 1/2	+1 1/2	0	-1
+1 1/2	-1	0	+1
+2	+1 1/2	-1	0
0	-1	-1 1/2	0
+1 1/2	+1 1/2	-1 1/2	+1 1/2
+1	+1	0	+1 1/2
+1	+1 1/2	0	0
0	0	0	0
		0	0
		0	0
		0	0
		0	0

NOTE: X - Lateral Axis
Z - Vertical Axis
Y - Longitudinal Axis

PREPARED BY		NORTH AMERICAN AVIATION, INC.	PAGE NO	17	OF	27
CHECKED BY			REPORT NO	Appendix A		
DATE			MODEL NO			

AZIMUTH

RETICLE OSCILLATION

GROUND FIRE - AFS-2253

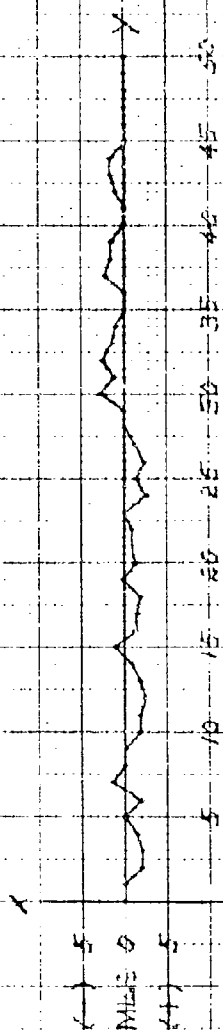
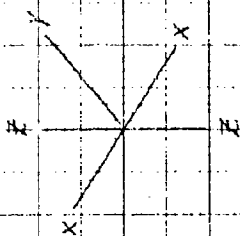
A-4 SIGHT - ACSP JOB #19

UNCLASSED - RANGE 8400

16 MM TIME KODAK - 16 FRAMES/SEC

DATA: TABLE VIII

AIRPLANE COORDINATE SYSTEM



FRAMES

SECONDS

(APPROXIMATE TIME)

FIG. 4

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CHECKED BY:			NA-10-200
DATE:			REPORT NO Appendix A
			MODEL NO

ELEVATION
 RETICLE OSCILLATION
 GROUND FIRE - APR 2753
 A-4 SIGHT - AC SEP JOB #13
 UNPAID - RANGE 2470
 16MM CINE KODAK - 16 FRAMES/SEC
 DATA TABLE VIII

AIRPLANE COORDINATE SYSTEM

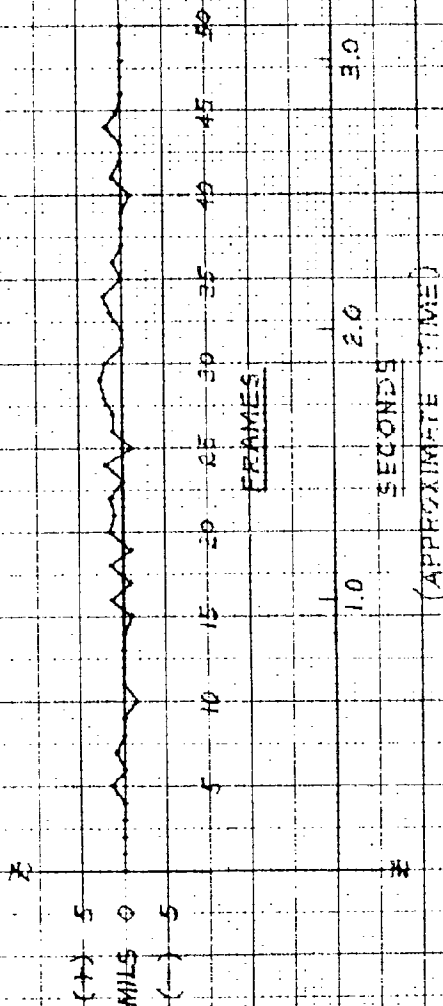
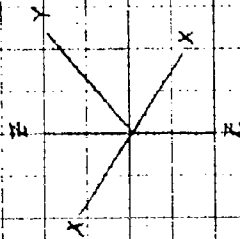


FIG. 4a

NORTH AMERICAN AVIATION, INC.

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Appendix A
Page 19

G. Ground Fire Test - N-9 Sight Head - A-4 Adapter with Removable Combining Glass:

An A-4 sight adapter assembly, incorporating a removable combining glass, was constructed to eliminate the difficulty of cleaning the aft face of the windshield and the forward face of the combining glass (see photographs 187-95-27B and 187-95-27C). The adapter, in conjunction with an N-9 sight, was mounted in the airplane (see photographs 172-95-29A, 172-95-29B and 172-95-29C). A ground firing test was conducted and recorded. The following table is based upon a frame-by-frame analysis of the film record.

TABLE IX

GROUND FIRE TEST - SHIP AF51-2753

N-9 SIGHT HEAD - A-4 ADAPTER REMOVABLE COMBINING GLASS

HIGH FREQUENCY VIBRATION

Reticle Excursion in Azimuth (Mils)		Reticle Excursion in Elevation (Mils)	
Predominant Range	Peak	Predominant Range	Peak
1-2	2-3	1-2	2-3

H. Retention of Boresight - Removable Combining Glass:

In order to determine whether or not the removable combining glass retained the original boresighted position after removal and re-installation, the N-9 sight was boresighted on a target 1,000 inches from the sight and the combining glass was removed and reinstalled twelve times. The position of the reticle with respect to the target was checked upon completion of each installation of the combining glass. The thumb screws which retain the combining glass in the adapter were tightened as follows:

<u>Code</u>	<u>Condition</u>
1	Both screws tightened simultaneously.
2	Excessive play taken up simultaneously, then the right hand screw and the left hand screw, respectively, were cinched down.
3	Excessive play taken up simultaneously, then the left hand screw and the right hand screw, respectively, were cinched down.
4	Right hand screw fully tightened. Left hand screw completely loose.
5	Right hand screw fully tightened, then left hand screw fully tightened.

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INTERNATIONAL AIRPORT
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TABLE X

Trial No.	Variation from Original Boresighted Position (Mils)				
	Code	Left	Right	Up	Down
1	1	0	0	0	0
2	1	0	0	0	0
3	1	0	0	0	0
4	1	1/2	-	0	0
5	1	0	0	0	0
6	1	0	0	0	0
7	2	1/2	-	-	1/2
8	3	-	1/2	-	1/2
9	1	0	0	-	1/2
10	3	1	-	-	1
11	4	5	-	0	0
12	5	2-1/2	-	0	0

I. Ground Fire Test - A-4 Sight No. 199 A-4 Adapter with Removable
Combining Glass:

Upon completion of the N-9 ground fire test, the adapter was assembled to A-4 sight number 199 (see photograph 172-95-31B). The assembled unit was installed in ship AF51-2753. A ground firing test was conducted and recorded. The following table is based upon a frame-by-frame analysis of the film record.

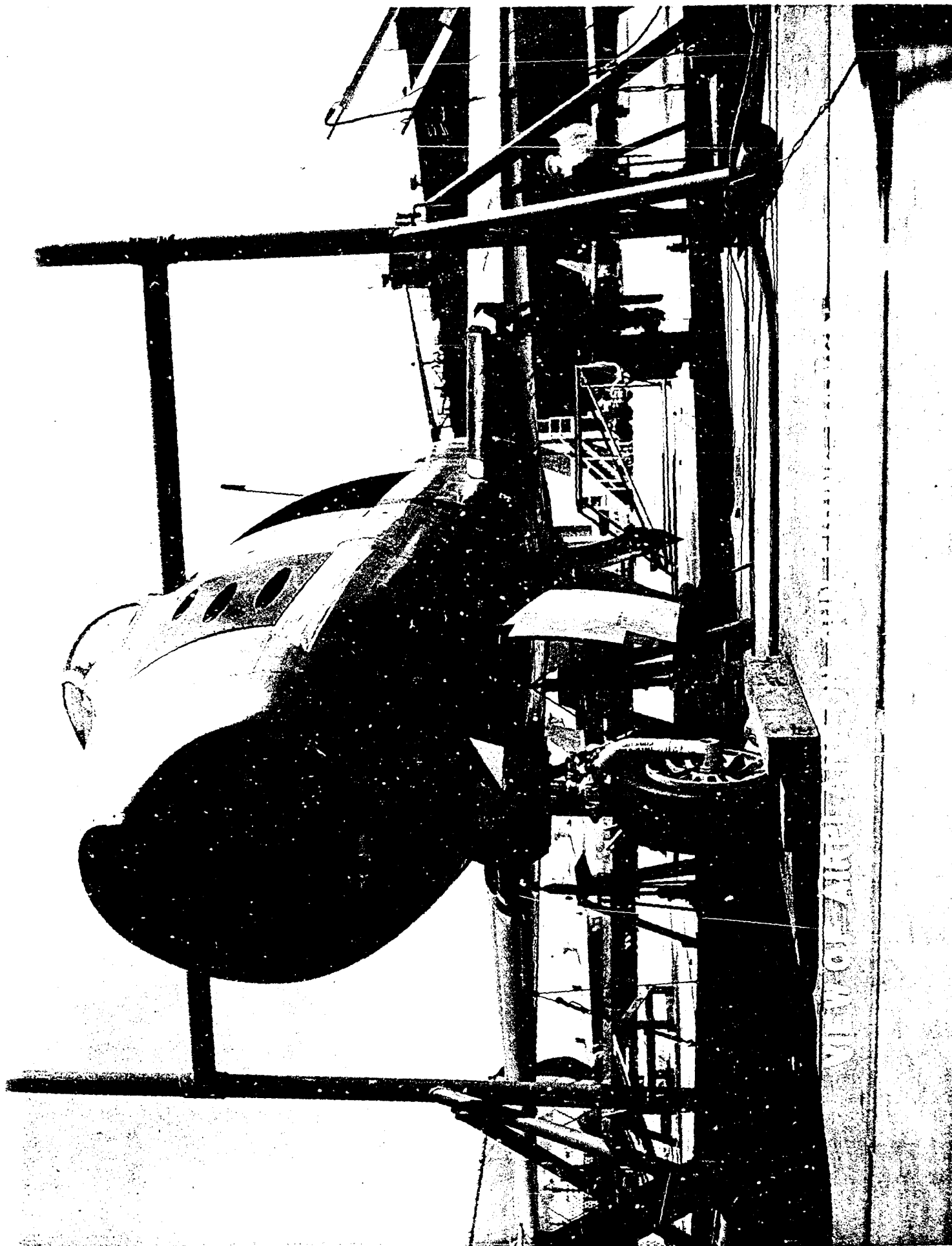
TABLE XI

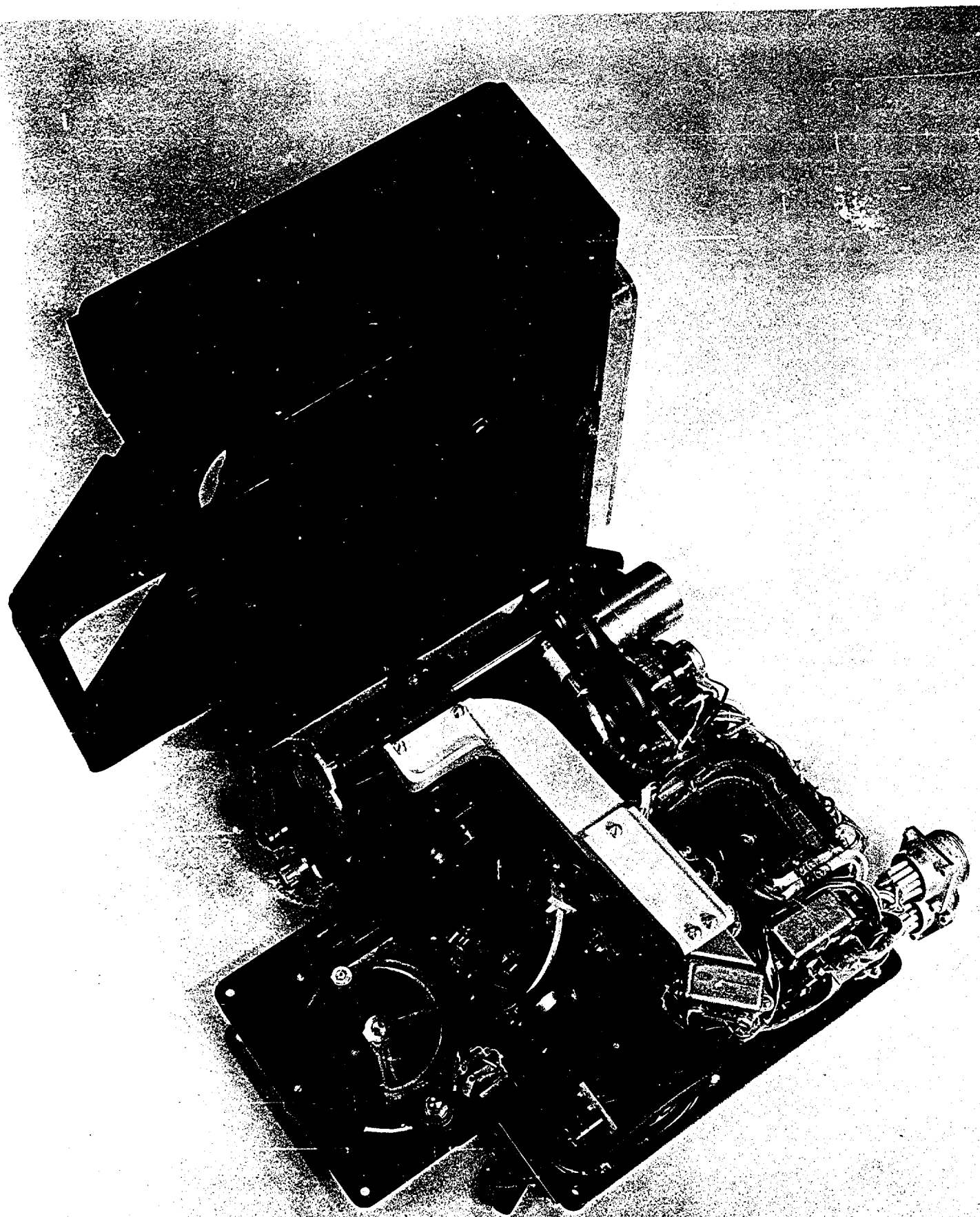
GROUND FIRE TEST - SHIP AF51-2753

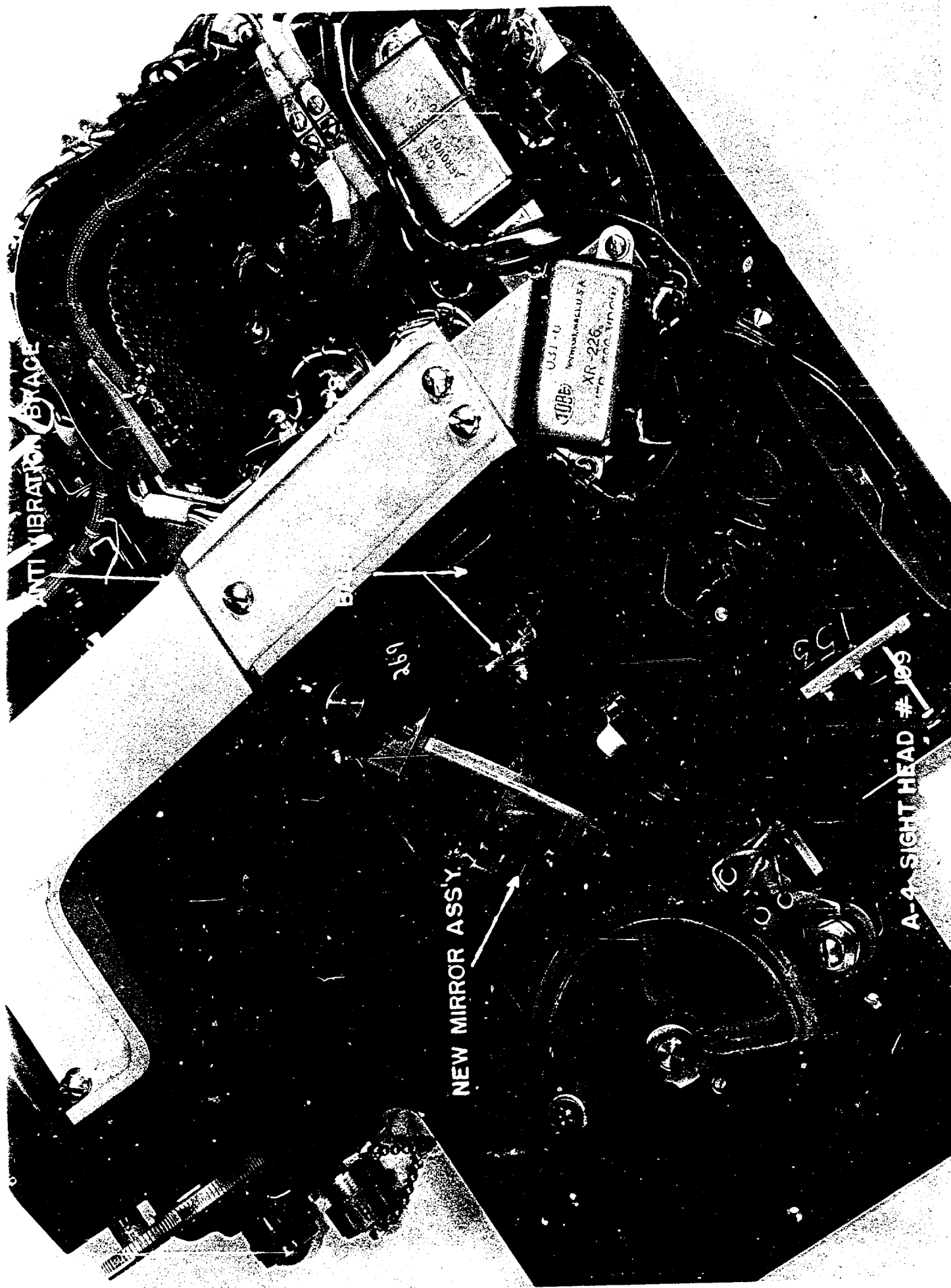
A-4 SIGHT HEAD NO. 199 - A-4 ADAPTER REMOVABLE COMBINING GLASS

HIGH FREQUENCY VIBRATION

Condition	Reticle Excursion in Azimuth (Mils)		Reticle Excursion in Elevation (Mils)	
	Predominant Range	Peak	Predominant Range	Peak
1. Mech. Caged	6-9	10-15	1-3	3-4
2. Elect. Caged	4-6	7-8	2-4	7-8
3. Uncaged - Range 2400	3-5	9-12	2-4	6-7
4. Uncaged - Min. Range	3-5	10-12	2-4	5-7







ANTI VIBRATION BRACE

NEW MIRROR ASS'Y.

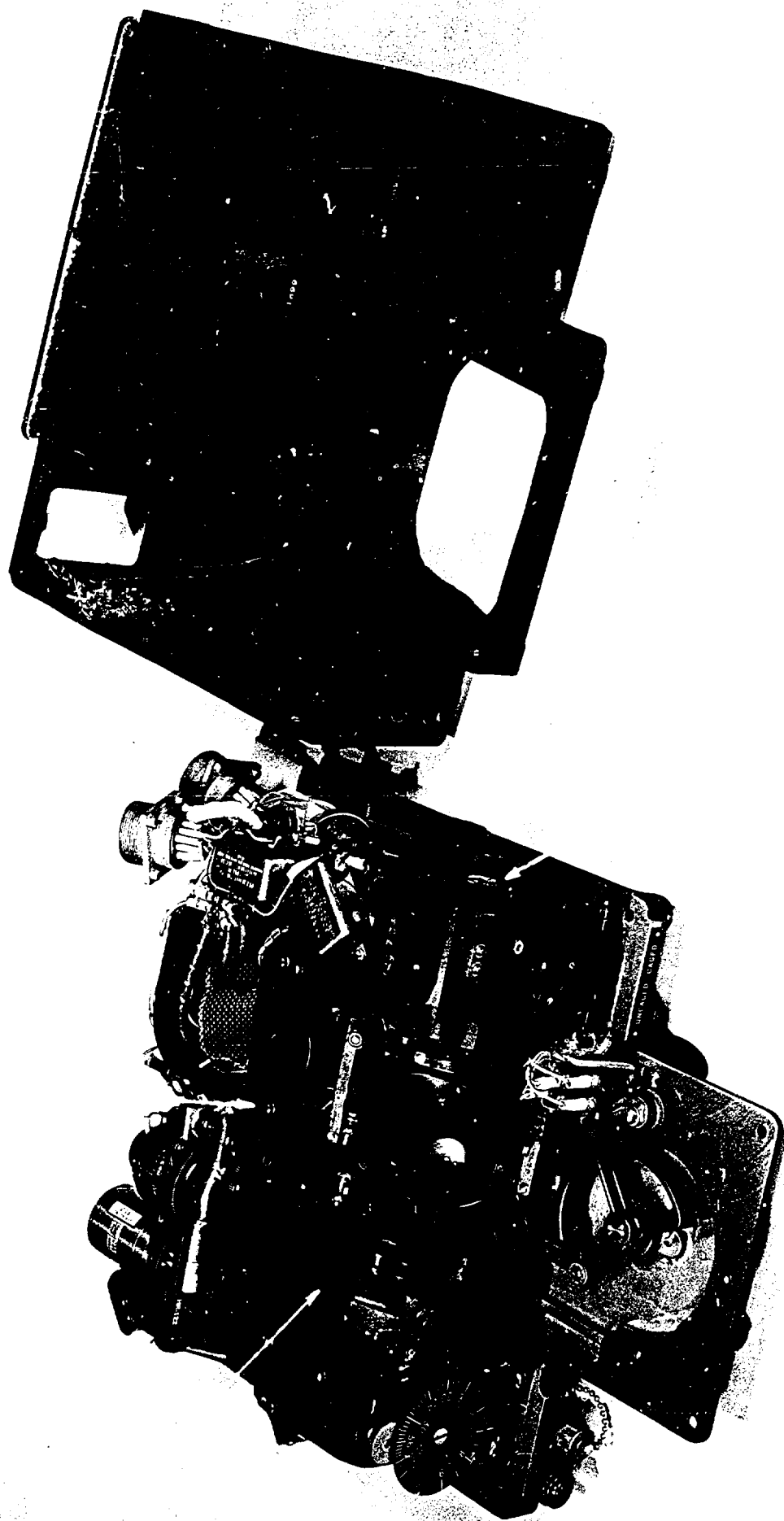
A-4 SIGHT HEAD # 109

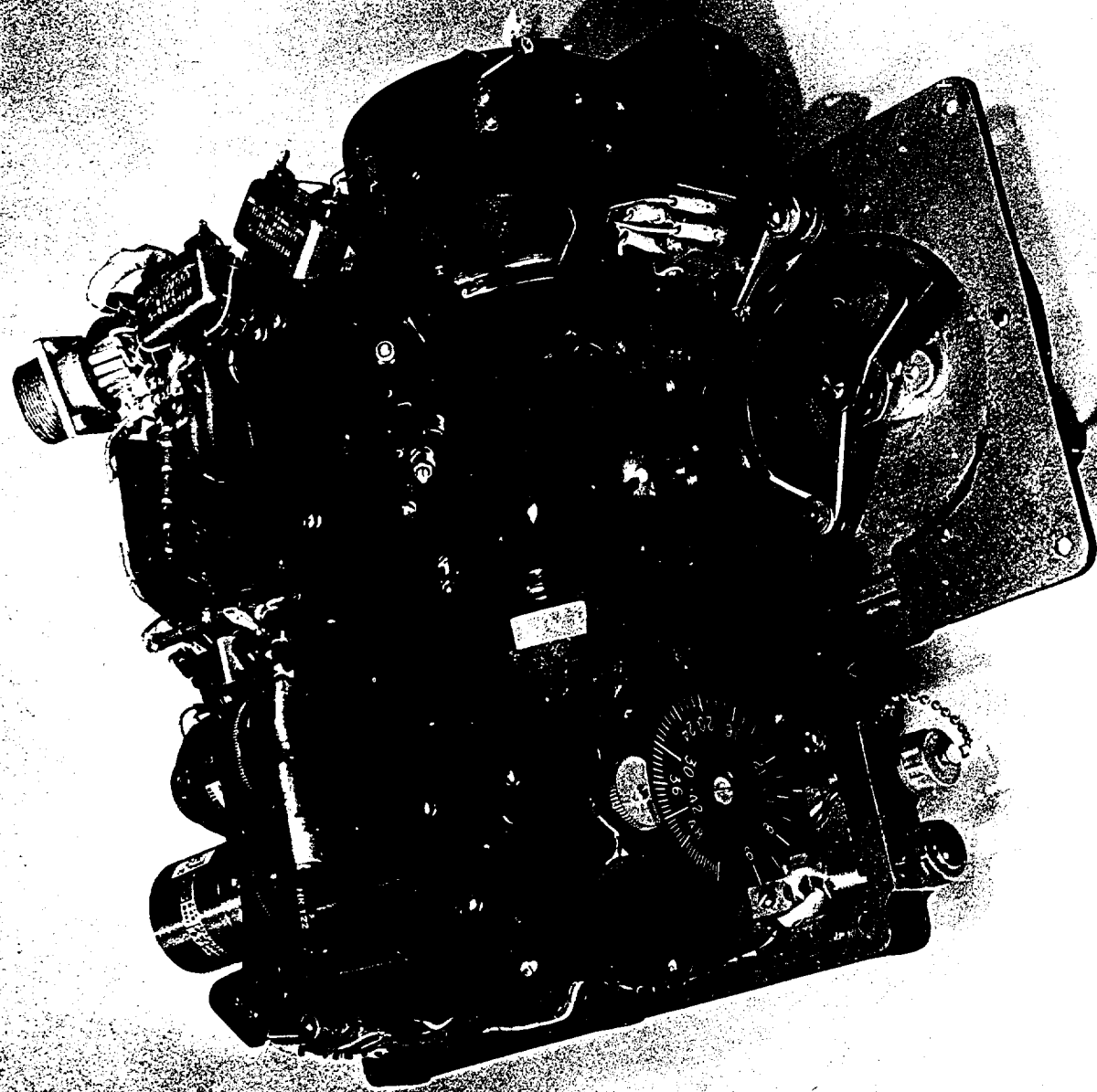
153

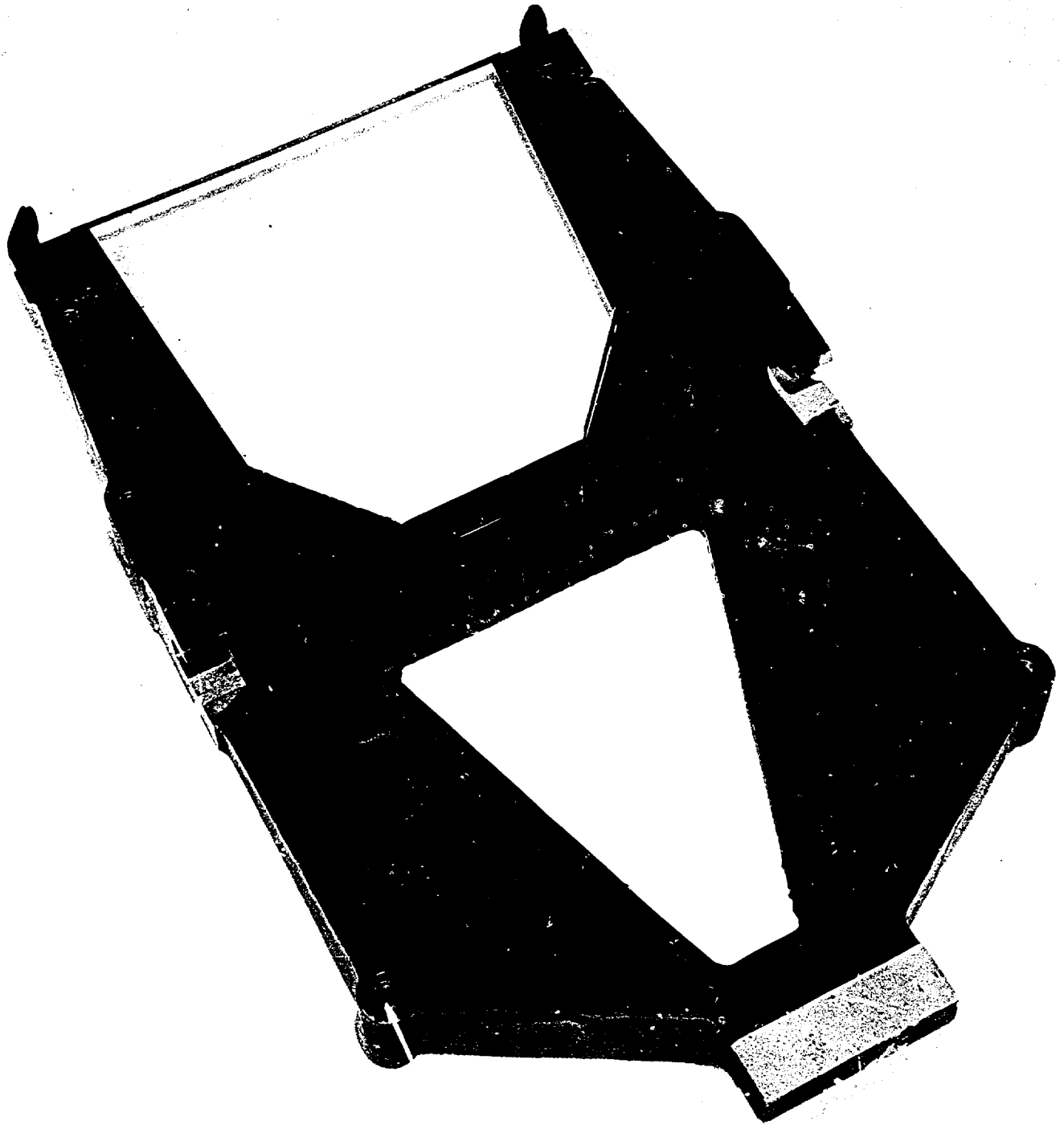
TUBE
6X8-226
U31-6

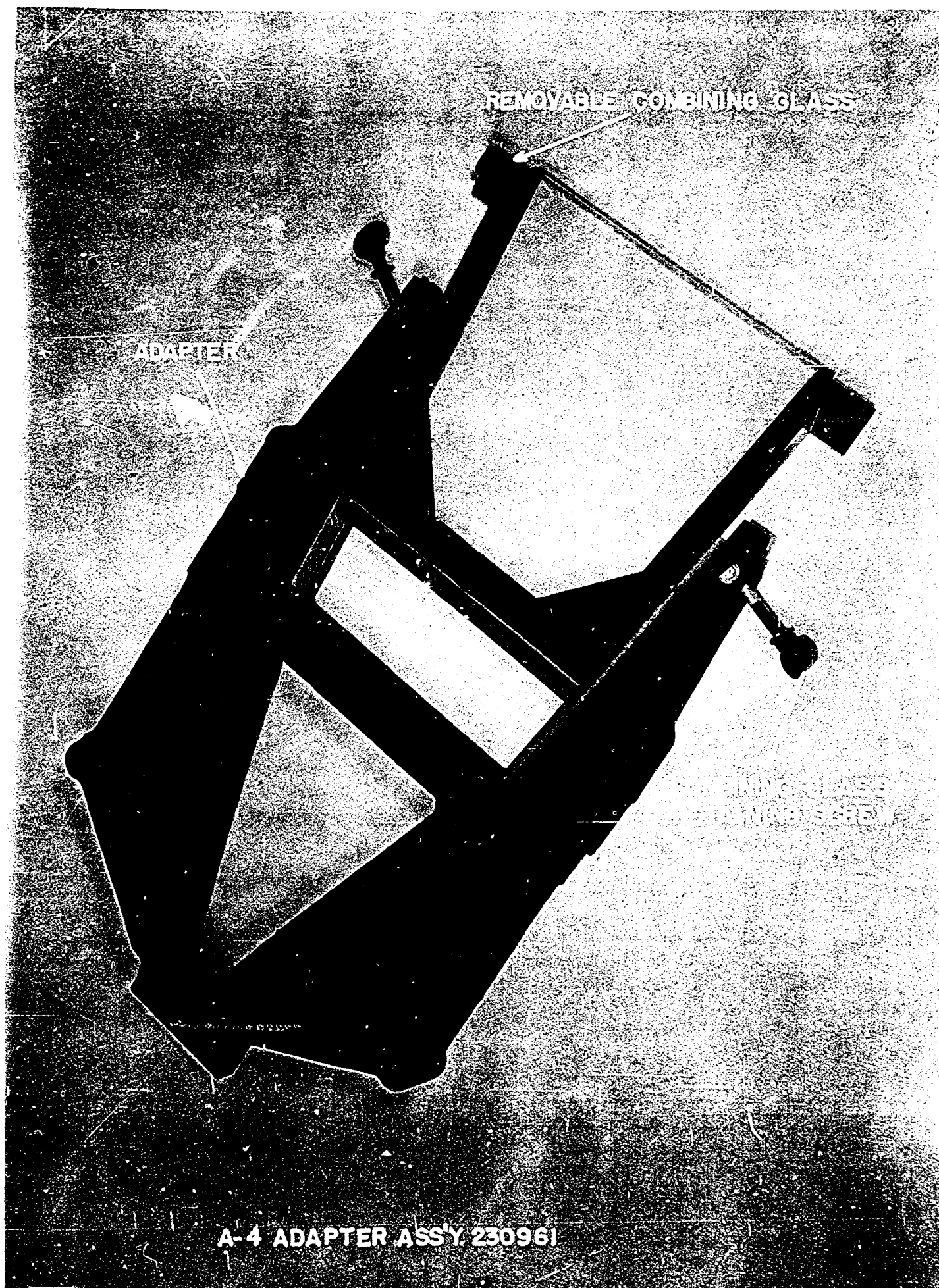
1092

B









REMOVABLE COMBINING GLASS

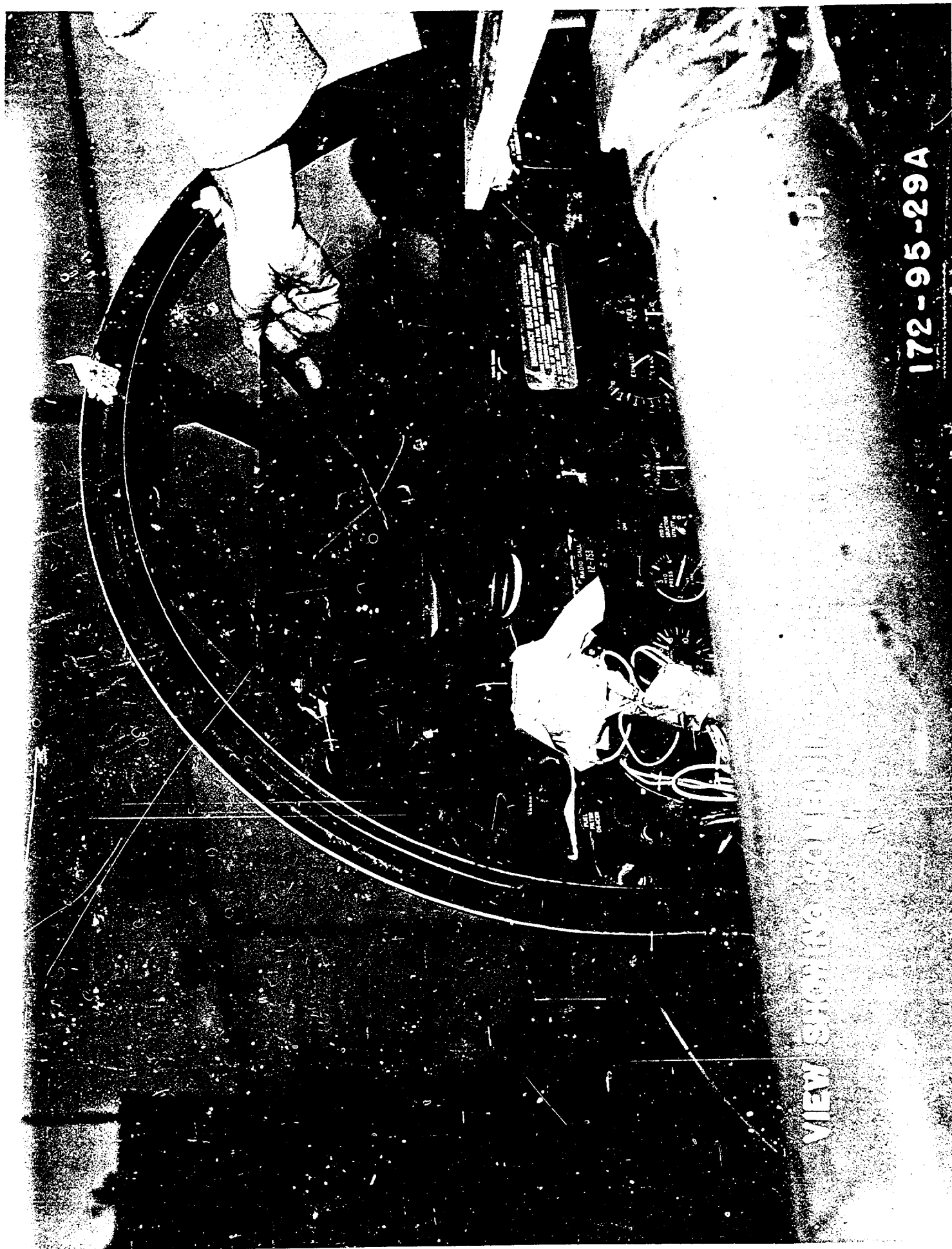
ADAPTER

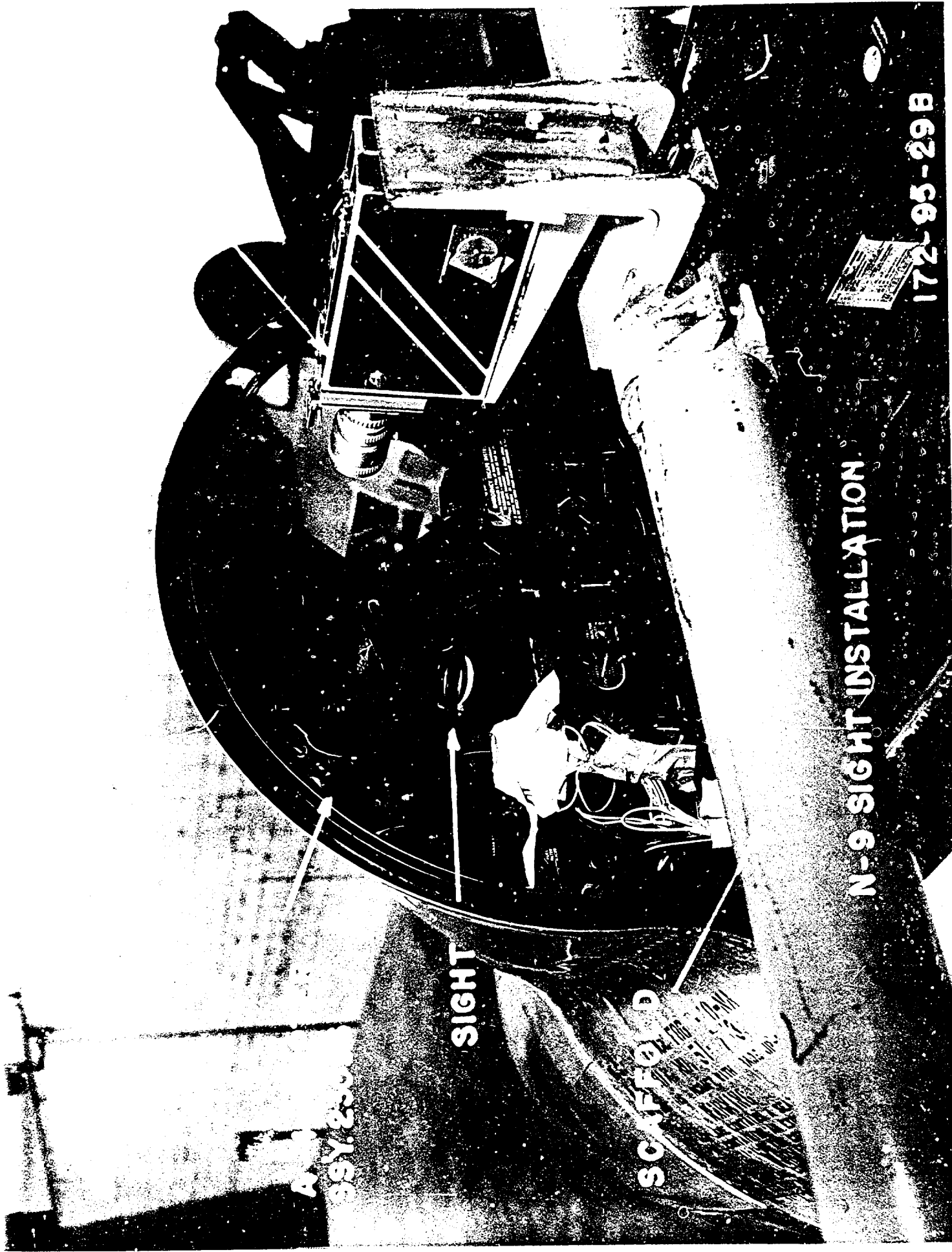
GLASS
RETAINING SCREW

A-4 ADAPTER ASS'Y 230961

VIEW SHOWING (SEE FIGURE 1) OF EXTERIOR OF AEA

172-95-29A





AM 99Y.230

SIGHT

SCAFFOLD

N-9 SIGHT INSTALLATION

172-95-29B

A-4 ADAPTER
ASS'Y 230961

N-9 ADAPTER

N-9 SIGHT

VIEW SHOWING N-9 SIGHT INSTALLED IN
COMPASS WITH A-4 ADAPTER ASS'Y 230961

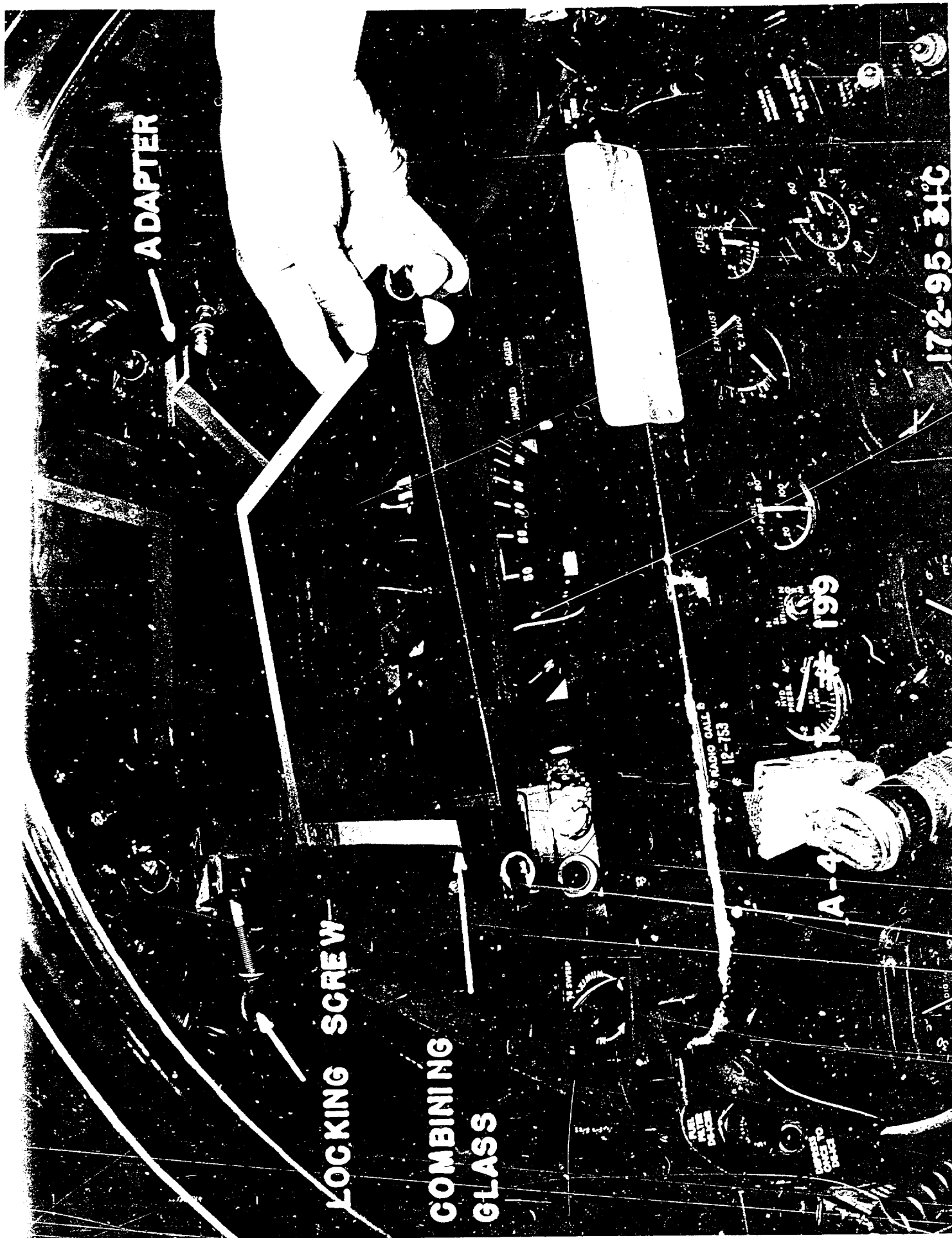
172

19632

魚

172-95-318

19-753
TWO COPIES
3



A DAPTER

LOCKING SCREW

COMBINING
GLASS

[Redacted Label]

A-4
199

172-95-340

12-753

EXHAUST





DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE OHIO

FEB 19 2002

MEMORANDUM FOR DTIC/OCQ (ZENA ROGERS)
8725 JOHN J. KINGMAN ROAD, SUITE 0944
FORT BELVOIR VA 22060-6218

FROM: AFMC CSO/SCOC
4225 Logistics Avenue, Room S132
Wright-Patterson AFB OH 45433-5714

SUBJECT: Technical Reports Cleared for Public Release

→ References: (a) HQ AFMC/PAX Memo, 26 Nov 01, Security and Policy Review,
AFMC 01-242 (Atch 1)

(b) HQ AFMC/PAX Memo, 19 Dec 01, Security and Policy Review,
AFMC 01-275 (Atch 2)

(c) HQ AFMC/PAX Memo, 17 Jan 02, Security and Policy Review,
AFMC 02-005 (Atch 3)

1. Technical reports submitted in the attached references listed above are cleared for public release in accordance with AFI 35-101, 26 Jul 01, *Public Affairs Policies and Procedures*, Chapter 15 (Cases AFMC 01-242, AFMC 01-275, & AFMC 02-005).

2. Please direct further questions to Lezora U. Nobles, AFMC CSO/SCOC, DSN 787-8583.

LEZORA U. NOBLES
AFMC STINFO Assistant
Directorate of Communications and Information

Attachments:

1. HQ AFMC/PAX Memo, 26 Nov 01
2. HQ AFMC/PAX Memo, 19 Dec 01
3. HQ AFMC/PAX Memo, 17 Jan 02

cc:

HQ AFMC/HO (Dr. William Elliott)



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE OHIO

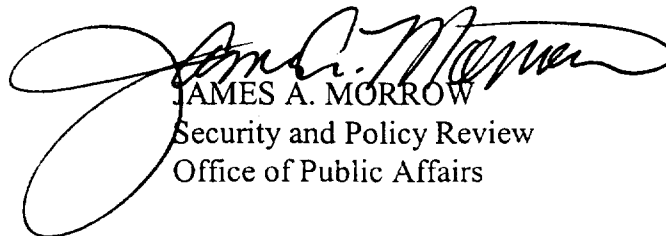
NOV 26 2001

MEMORANDUM FOR HQ AFMC/HO

FROM: HQ AFMC/PAX

SUBJECT: Security and Policy Review, AFMC 01-242

1. The following material has been reviewed for security and policy LAW AFI 35-101, Chapter 15. It is cleared for public release:
 - a. "Investigation of A-4 Sight in F-86E Airplane, 18 July 1952, DTIC No. AD-473 192
 - b. Operational Suitability Test of Open Gun Ports for F-86 Aircraft, 31 August 1949, DTIC No. AD-B971 411
 - c. Letter Report on Relative Aerial Combat of the F-84E Versus the F086A Capability, 30 January 1951, DTIC No. AD-B971 840.
2. Two reports require clearance from other organizations. Hypoxia and Undetermined Jet Accidents," will be reviewed by 311th Human Systems Wing, and "RCAF Ejection Experience," will be forward to Air Staff for coordination with RCAF.
3. If you have any questions, please call me at 77828. Thanks.


JAMES A. MORROW
Security and Policy Review
Office of Public Affairs

Attachment:
Your Ltr 26 November 2001

26 November 2001

MEMORANDUM FOR: HQ AFMC/PAX
Attn: Jim Morrow

FROM: HQ AFMC/HO

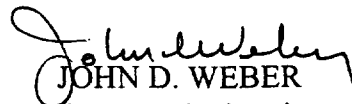
SUBJECT: Releasability Reviews

1. Please conduct public releasability reviews for the following attached Defense Technical Information Center (DTIC) reports:

- Cleared
AFMC
01-259
- a. *Investigation of A-4 Sight in F-86E Airplane*, 18 July 1952; DTIC No. AD- 473 192.
- b. *Operational Suitability Test of Open Gun Ports for F-86 Aircraft*, 31 August 1949; DTIC No. AD-B971 411.
- c. *Hypoxia and Undetermined Jet Accidents*, 19 October 1956; DTIC No. AD-115 661.
- d. *Letter Report On Relative Aerial Combat Of The F-84E Versus The F-86A Capability*, 30 January 1951; DTIC No. AD-B971 840.
- e. *RCAF Ejection Experience, 1952-1961, 1965*; DTIC No. AD-465 171.
- Cleared
AFMC
01-260

2. These attachments have been requested by Dr. Kenneth P. Werrell, a private researcher.

3. The AFMC/HO point of contact for these reviews is Dr. William Elliott, who may be reached at extension 77476.


JOHN D. WEBER
Command Historian

5 Attachments:

- a. DTIC No. AD- 473 192
b. DTIC No. AD-B971 411
c. DTIC No. AD- 115 661
d. DTIC No. AD-B971 840
e. DTIC No. AD- 465 171